



## Introduction & Objective

- Non-malignant abnormalities in the peripheral zone are common in multi-parametric prostate MRI (mpMRI).
- Findings include mild decrease in T2-weighted signal, mild decrease in diffusion-weighted imaging signal, or enhancement in a diffuse or linear pattern without surrounding mass effect.
- These abnormalities are often reported as "prostatitis" or "inflammation" and may lead to patient anxiety, treatment or referral to a urologist.
- Herein, we investigate the relationship between MRI findings of "inflammation" or "prostatitis", and clinical symptoms.

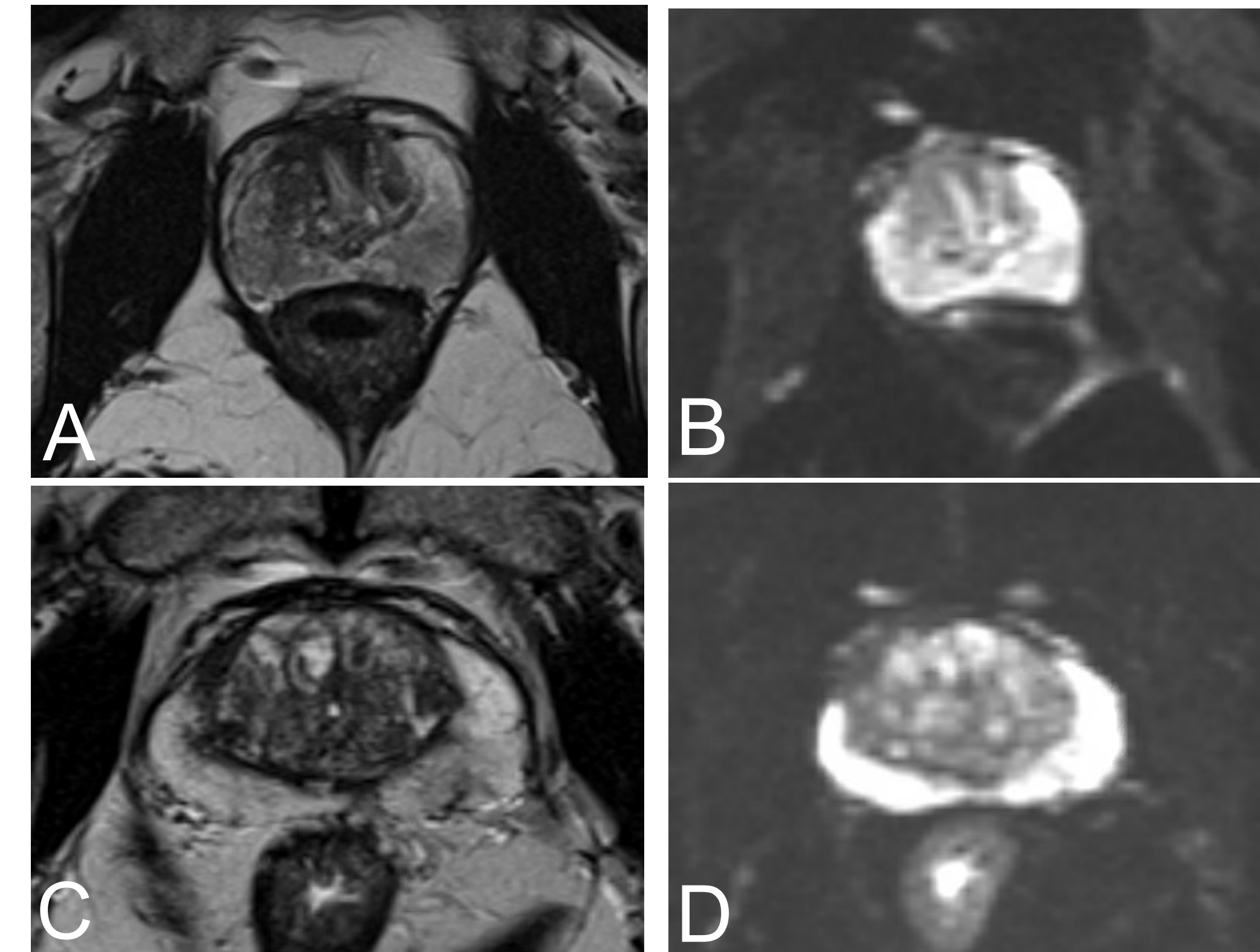
## Methods

- Retrospective review of patients undergoing MRI at our institution over a one year period for the indication of active surveillance for low risk prostate cancer or elevated PSA
- Patients divided into 2 groups: whether or not they had "prostatitis" or "inflammation" on radiology report vs patients without "prostatitis" or "inflammation"
- Compared PSA, age, history of biopsy/intervention, report of lower urinary tract symptoms (LUTS), report of pelvic or perineal pain, use of urologic medications for LUTS, presence of urinalysis abnormalities, prostate volume and PIRADS score
- Chi-square test for dichotomous variables; t-test for continuous variables.  $p < 0.05$  considered significant

## Results

Variable	Inflammation/ Prostatitis	No Inflammation/ Prostatitis	P-value
LUTS	57%	60%	0.69
Use of Urologic Medication	66%	55%	0.074
Biopsy finding of acute chronic or remote/current inflammation	57%	35%	0.002
Moderate to severe LUTS per IPSS (8-19, 20+)	8%	17%	0.038
Pelvic / perineal pain/ Chronic dysuria Pyuria on urinalysis	<5%	<5%	

- 104 patients in the *IP* group vs 119 in the *without IP*
- Similar baseline characteristics between the two cohorts (data not shown)
- Acute or chronic inflammation more commonly noted on biopsy samples from patients with MRI findings of "inflammation or prostatitis"
- Presence of any LUTS was similar between the two groups, while the *NO IP* cohort actually had a higher frequency of moderate/severe LUTS. Pelvic or perineal pain had similar prevalence in the two groups.
- Use of any urologic medications was more common in the "inflammation or prostatitis" cohort, though not significantly so.
- **Representative Images:** **A:** T2 axial image with diffuse mild heterogeneous hypointense signal. **B:** Diffusion-Weighted Image (DWI) from the same patient with mild heterogeneous hypointense signal. Images were interpreted as demonstrating "probable prostatitis". **C:** Homogeneous T2 isointense signal in the peripheral zone. **D:** Homogeneous hyperintense signal in the peripheral zone on DWI. Images were interpreted as demonstrating "no focal lesions".



## Conclusions

- Among men undergoing MRI, an incidental finding of prostatitis or inflammation was not associated with an increase in the report of LUTS or pelvic pain
- Use of urologic medications to address LUTS was not significantly more common in the "inflammation/prostatitis" cohort
- Biopsy findings of inflammation (chronic or acute) was more common in patients with "inflammation/prostatitis" on MRI
- The prevalence of pelvic or perineal pain were uncommon in men with or without findings of "inflammation/prostatitis" on MRI
- **We suspect that MRI findings of prostatitis or inflammation are rarely representative of clinical prostatitis (NIH Type I-III) but may represent a Type IV (Asymptomatic Inflammatory) prostatitis for which work-up/treatment is not recommended.**